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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/041,668 | 01/10/2002 | Isamu Ohshita | Q67887 | 2949 |
| 7590 12/01/2004 | | | EXAMINER | |
| SUGHRUE MION, PLLC 2100 Pennsylvania Avenue, NW Washington, DC 20037-3213 | | | ROY, SIKHA | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2879 | |

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/041,668

Applicant(s)

OHSHITA ET AL.

Examiner

Sikha Roy

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7-11 and 13-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-11 and 13-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Amendment, filed on July 29, 2004 has been entered and is acknowledged by the Examiner.

New claims 7-11,13-17 have been entered.

The new drawing of Figs. 1 and 2 have been entered and are approved by the examiner.

Claim Objections

Claims 13-17 are objected to because of the following informalities:

There is no claim 12 and hence accordingly the claims 13-17 should be numbered as claims 12-16 respectively.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-3,7, 9,16 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,373,453 to Yudasaka.

Regarding claim 1 Yudasaka discloses (Figs. 3B, column 6 lines 5-40,60-65, column 7 lines 1-10, line 65 through column 8 line 10) an organic electroluminescent display comprising plurality of transparent pixel electrodes 41 composed of ITO film disposed on a transparent substrate 10 via an inter-layer insulating film 51, an insulating film 52 disposed between adjacent pixel electrodes, an organic EL film 43 deposited on ITO films, a cathode (opposing electrode op) deposited on EL layer, the plurality of mask supporting insulating layers (bank layer bank, shaded region shown in Figs.3B in which lines that slant to the left drawn at a large pitch) constituting a part of the insulating film. Yudasaka discloses (column 8 lines 18,19) that the opposing electrode op is generally formed by mask-sputtering, and hence these plurality of bank layers interposed between the op electrodes and the insulating film 52 are anticipated as mask supporting layers on which mask is formed for the deposition of the op electrodes.

In claim 1, the functional language of "preventing a metal mask which is used in formation of the organic thin film and the cathode thin film from being in contact with the pixel portion of the transparent substrate" is related to the process of making the final product of the organic EL display, the metal mask being an intermediate product is not present in the final product. The Examiner notes that the claim limitation that "mask

supporting layers preventing a metal mask which is used in formation of the organic thin film and the cathode thin film from being in contact with the pixel portion of the transparent substrate " is drawn to a process of manufacturing which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

Furthermore the Examiner notes that plurality of mask supporting layers (bank layers) of Yudasaka formed around the organic film has a thickness such that a predetermined gap is provided between the substrate and the mask used for deposition of cathode electrode.

Regarding claim 2 Yudasaka discloses (Figs. 1, 3B column 6 lines 3-11, 27-40,60-65) the active matrix display device 1 uses TFT substrate 10 as a base in which first TFT 20 connected with scanning signals, second TFT 30 and ITO film (pixel electrode) 41 are disposed over the inter-layer insulating film 51 and are connected to one another in an active matrix system.

Referring to claim 3, Yudasaka discloses (column 7 lines 65,66) the insulating mask- supporting layer (bank layer bank) composed of a resist film or polyimide film.

Regarding claim 7 Yudasaka discloses (Fig. 3B) all the limitations same as of claim 1 and additionally the plurality of insulative mask supporting layers (bank) disposed on a part of the first insulating film 52.

Regarding claim 9 Yudasaka discloses the insulative mask supporting layers (bank) are formed on the first insulating layer 52.

Claim 16 essentially recites the same limitation as of claim 9 and is rejected for the same reason.

Regarding claim 17 it is clearly evident from Fig. 3B of Yudasaka that the insulative mask supporting layers have such thickness that predetermined gap is provided between the corresponding one of ITO films and the top of the mask supporting layer (upper layer of the thick insulating bank) on which mask is formed for deposition of the cathode.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,373,453 to Yudasaka.

Regarding claim 4, Yudasaka discloses the claimed invention except for the limitation of the insulative mask supporting layers having a reverse tapered shape. It has been held that a change in shape is generally recognized as being within the level

of ordinary skill in the art. *In re Dailey*, 357 F.2d 669, USPQ 47 (CCPA 1966). It would have been obvious to one having ordinary skill in the art to modify the shape of the insulative bank layers of Yudasaka in a reversed tapered configuration, since such a modification would have involved a mere change in the shape of a component.

Claims 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,373,453 to Yudasaka and further in view of U.S. Patent 6,420,834 to Yamazaki et al.

Regarding claim 8 Yudasaka discloses the insulative mask supporting layers (bank) formed from polyimide film but does not exemplify the material of the first insulating layer.

Yamazaki in analogous art of light emitting device discloses (column 11 lines 34-41 Fig. 6) the interlayer insulating film 39 formed of organic resin, polyamide (resist) film. It is to be noted that insulating film formed of polyimide provides planarization of the layer so that there is no level difference caused by the TFT and thus facilitates deposition of flat EL film.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to provide the first insulating layer of Yudasaka made of polyimide same as the mask supporting layer as taught by Yamazaki for providing planarization of the layer so that there is no level difference caused by the TFT and thus facilitating deposition of flat EL film.

Regarding claim 15 Yudasaka and Yamazaki disclose the claimed invention having both of the first insulating layer and mask supporting layer formed of same material of organic polyimide film. Yudasaka and Yamazaki do not disclose the limitation reciting 'the insulative mask supporting layers constituted by locally thickened portion of the first insulating layer' which is the method of forming the mask supporting layer. The examiner notes that the method of forming the device is not germane to the issue of patentability of the device itself and hence this limitation has not been given patentable weight.

Claims 10,11,13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,373,453 to Yudasaka.

Regarding claims 10 and 11 Yudasaka discloses the claimed invention except for the limitation of the insulative mask supporting layers are stripe (claim 10) and island(claim 11) shaped. It is noted that applicant's specific stripe or island shape of the mask supporting layers does not solve any of the stated problems or yield any unexpected results. Thus one of ordinary skill in the art would consider the stripe or island shape of the insulating mask supporting layers as an obvious matter of design choice and it appears that the invention would perform equally well with the insulating bank layer of Yudasaka.

Regarding claim 13 Yudasaka discloses the claimed invention (bank layer having thickness of 1 μm or more) except for the limitation of thickness of the mask supporting layers of at least 2 μm . It has been held that discovering an optimum value of a result

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effective variable involves only routine skill in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980). Thus, it would have been obvious to one of ordinary skills in the art at the time the invention was made to have the mask supporting layer if Yudasaka having thickness of at least 2 μm , since discovering an optimum value of a result variable is considered within the skills of the art.

Regarding claim 14, Yudasaka discloses the claimed invention except for the limitation of the insulative mask supporting layers having a tapered or ridge shape. It has been held that a change in shape is generally recognized as being within the level of ordinary skill in the art. *In re Dailey*, 357 F.2d 669, USPQ 47 (CCPA 1966). It would have been obvious to one having ordinary skill in the art to modify the shape of the insulative bank layers of Yudasaka in a tapered configuration, since such a modification would have involved a mere change in the shape of a component.

Response to Arguments

Applicant's arguments filed July 29, 2004 with respect to claim 1 have been fully considered but they are not persuasive.

In response to applicant's argument that Yudasaka does not disclose the unique combination of feature of "plurality of insulative mask supporting layers which prevent a metal mask which is used in formation of the organic EL thin film from being in contact with a pixel portion" the examiner respectfully submits that Yudasaka indeed discloses insulating supporting layer (bank) formed on the first insulating film. The functional language of "preventing a metal mask which is used in formation of the organic thin film

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and the cathode thin film from being in contact with the pixel portion of the transparent substrate” is related to the process of making the final product of the organic EL display, the metal mask is an intermediate product and is not present in the final product. The Examiner notes that this claim limitation that “mask supporting layers preventing a metal mask which is used in formation of the organic thin film and the cathode thin film from being in contact with the pixel portion of the transparent substrate “ is drawn to a process of manufacturing which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

Furthermore the Examiner notes that plurality of mask supporting layers (bank layers) of Yudasaka formed around the organic film has a thickness such that a predetermined gap is provided between the substrate and the mask used for deposition of cathode electrode.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

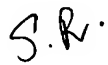
Contact Information

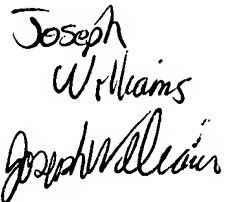
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sikha Roy
Patent Examiner
Art Unit 2879


Joseph Williams